

Programming Concepts for Mechanical Engineers

I can sell any car for \$99

Title: What kind of a monthly payment can you afford?

Background: The monthly payment on a car loan is given by the formula

$$PMT = \frac{LA * IPM}{1 - (1 + IPM)^{-NM}}$$

where

PMT = monthly payment in dollars

LA = loan amount in dollars

IPM = interest rate in fraction per month (Note the units)

NM = number of monthly payments (Note the units)

Example to use in program: For a loan of \$29,600 at 6.75% annual percentage rate (APR) for a 4 year term, then

LA = \$29,600

IPM = APR/(12*100)=6.75/(12*100) = 0.005625

NM = NY x 12 = 4 x 12 = 48 months

Hence

$$\begin{aligned} PMT &= \frac{29600 * 0.005625}{1 - (1 + 0.005625)^{-48}} \\ &= \$705.38 \end{aligned}$$

Specifications:

Write a MATLAB worksheet that calculates the monthly payment for buying a car, based on the loan amount (dollars), length of loan (years) and interest rate (annual percentage rate).

Three inputs are assigned in the beginning of the worksheet as variable assignment

- Loan amount entered in dollars,
- Length of loan entered in integer years, and
- Interest rate entered in annual percentage rate (APR).

The output is the

- the monthly payment on the car.

Display and print with explanation at least the following.

- Your name and section number
- A short description of the problem
- Loan amount in dollars,

- Length of loan in integer years,
- Interest rate in annual percentage rate
- Monthly payment in dollars

IMPORTANT: Visit this link to see sample homework.

http://www.eng.usf.edu/~kaw/class/programming/homework/sample_homework.htm

There should be no misunderstanding about the format and submission.